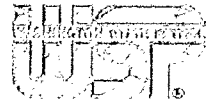


**WASHINGTON STATE PATROL (WSP) PUBLIC RECORD for SMDs**  
**CERTIFICATION CONCERNING DESIGN AND CONSTRUCTION**  
**OF ELECTRONIC SPEED MEASURING DEVICES**  
**OR LASER SPEED MEASURING DEVICES**



I, **Steen Nicholson**, do certify under penalty of perjury under the laws of the State of Washington that the following is true and correct: Date 8/27/14 Location Tumwater Signature Steen Nicholson

I am employed with the WSP as an Electronic Design Engineer, Speed Measuring Device (SMD) Expert, and assigned as co-custodian of the SMD- Certification Management (CM) records. I am personally familiar with the WSP SMD manuals and how each of the WSP SMDs are designed and operated. I have been employed in such a capacity since September 2007. I have been authorized to testify as an Expert on behalf of the WSP SMD program. Part of my duties include, supervising the maintenance and repair of all types of electronic and laser SMDs used by the Washington State Patrol.

I possess the following qualifications with respect to SMDs:

I have completed the Washington State Patrol Speed Measuring Course for Radar and Lidar at the Washington State Patrol Training Division, Shelton Washington. I have successfully completed Certifications from MPH industries, Kustom Signals, Laser Technologies Incorporated, Applied Concepts and Aerial Speed Detection systems, by Churchill Navigation. My formal education is Associate Arts and Science and Electronic Engineering Technology Degree from Pierce College, Lakewood Washington. My military experience was a technician in the maintenance, repair, modification, and calibration of Pulse Search Radar and five years experience as a Quality Assurance Inspector on Pulse Search Radar. I hold an FCC General Radiotelephone Operator License (General Radiotelephone Certificate).

I, **Anthony Hillock**, do certify under penalty of perjury under the laws of the State of Washington that the following is true and correct: Date 8/27/2014 Location Wenatchee Signature Anthony Hillock

I am employed with the WSP as an Electronic Design Engineer, Speed Measuring Device (SMD) Expert, and assigned as co-custodian of the SMD-Certification Management (CM) records. I am personally familiar with the WSP SMD manuals and how each of the WSP SMDs are designed and operated. I have been employed in such a capacity since January 2010. I have been authorized to testify as an Expert on behalf of the WSP SMD program. Part of my duties include, supervising the maintenance and repair of all types of electronic and laser SMDs used by the Washington State Patrol.

I possess the following qualifications with respect to SMDs:

I have completed the WSP Speed Measuring Course for Radar and Lidar at the Washington State Patrol Training Division, Shelton Washington. I have successfully completed Certifications from MPH industries, Kustom Signals, Laser Technologies Incorporated, Applied Concepts and Aerial Speed Detection systems, by Churchill Navigation. Eight years as a Senior System Technician with Day Wireless working with SMDs for counties and cities in the Northwest. Five years as a Metrologist with Verizon working on electronic test equipment including SMDs. Ten and one-half years experience with McDonnell Douglas calibrating and repairing test measurement and diagnostic equipment including aircraft radar test equipment and police SMDs. Five and one-half years military experience as a precision measurement equipment specialist. I hold an FCC General Radiotelephone Operator License (GROL).

The following describes the established WSP Speed Measuring Device program conducted per WSP Standard Operating Procedure, Co-directed by the two SMD Experts Steen Nicholson and Anthony Hillock with qualifications listed on previous page.

The Washington State Patrol currently uses the following types of SMDs:

Type	Manufacture	Model
Radar	Kustom Signals	Falcon HR, Falcon, Trooper
Radar	Decatur Electronics	Genesis I, Genesis II, GHS, VPD
Radar	Applied Concepts	Stalker DSR, DSR II
Radar	MPH Industries	BEE III
Lidar	Kustom Signals	PRO Laser II, III, IV
Lidar	Laser Technologies Inc.	LTI 20-20, UltraLyte, TruSpeed LR, TruSpeed S
Aerial	Churchill Navigation	Augmented Reality System

The Washington State Patrol maintains manuals for all of the above stated SMDs. On the date indicated on the SMD-CM Record, under the direction of an authorized SMD expert the SMD was tested using WSP Standard Operating Procedures. The units were evaluated and certified by a WSP SMD Expert to meet or exceed existing performance standards and entered into the WSP SMD-CM data base.

The Washington State Patrol maintains a testing and certification program that requires each SMD to be tested and certified for accuracy at least once every two years.

Radar SMDs utilize the Doppler Effect to measure speed. Testing consists of transmitting selected frequencies from a precision signal generator to simulate various speeds. The SMD must indicate the correct speed  $\pm 1$ MPH in the stationary mode and  $\pm 2$ MPH in the moving mode (where applicable). The transmit center frequency for the radar unit is verified using appropriate test equipment to be within  $\pm 100$  MHz of specification. Tuning forks, used by the operators to perform daily checks, are certified to ensure their accuracy to  $\pm 0.5$  percent as specified by the manufacturer. All performance tests are verified.

Lidar SMDs measure speed based on the velocity of light and a precision time base reference. The certification checks are Head Up Display aiming reticle, internal self-test, fixed distance check, delta distance check, reference oscillator check. An operational test is done by comparing the lidar to a certified radar SMD.

Aerial SMDs accurately measure speed based on Geographical Information System (GIS) coordinates and a precision time base reference. Testing consists of internal self-test, timing circuit check, verifying alignment of Augmented Reality System (ARS) to track a GIS coordinate, fixed distance check, delta distance check. An operational road test is done by comparing the ARS to a certified radar SMD.

Based upon the education, training, experience, and knowledge of the WSP SMD Experts, the WSP accepts that each of the above stated pieces of equipment is so designed and constructed as to accurately employ GIS tracking, the Doppler Effect or the Velocity of Light in such a manner that when properly calibrated and operated by a trained operator, it will give accurate measurements of the speed of motor vehicles.

Individual Performance Tests and Certification of the tests are entered into the SMD-CM data base in the regular course of business under the penalty of perjury by entering an authorized user ID and password to authenticate it.

**See the following page for details concerning the individual certification record.**

## **Public Record Summarized Certificate for WSP Speed Measuring Device R2645**

The Washington State Patrol uses the following speed measuring device.

<b>TAG NUMBER</b>	R2645
<b>MANUFACTURER</b>	MPH
<b>MODEL</b>	BEE III
<b>SERIAL NUMBER</b>	BEE109001006
<b>FRONT ANTENNA SERIAL NUMBER</b>	BEN653018752
<b>REAR ANTENNA SERIAL NUMBER</b>	BEN653018753
<b>TUNING FORK 1</b>	MPH: 20.0 SERIAL NUMBER: 285648
<b>TUNING FORK 2</b>	MPH: 50.0 SERIAL NUMBER: 285502
<b>CERTIFYING OFFICIAL</b>	STEEN R NICHOLSON
<b>LOCATION OF CERTIFICATION</b>	TUMWATER

**R2645 Passed the Performance Tests and was certified for accuracy on  
08/09/2011.**

Individual Performance Tests and Certification of the tests are entered into the SMD-CM data base in the regular course of business. I certify under the penalty of perjury under the laws of the State of Washington that all statements made herein are true and accurate and that I have entered an authorized user ID and password to authenticate it.

I, STEEN R NICHOLSON, do hereby certify that Stated SMD meets the manufacturer's published specifications and has been certified using WSP Standard Operating Procedures with standards whose accuracies are traceable to the National Institute of Standards and Technology.

**For compliance with IRLJ 6.6 court rules concerning date and  
signature, follow the steps below.**

To obtain the full IRLJ 6.6 Design and Construction Certification for Courts:

1. Navigate to the following website: <https://www.wsp.wa.gov/>
2. Select the Driver dropdown menu and click on Speed Measuring Devices.
3. Click on Current IRLJ 6.6 Design and Construction Certification for Courts.
4. Click on View File to download the complete form.